Hcal Prototype II Simulation (Status and Plan)

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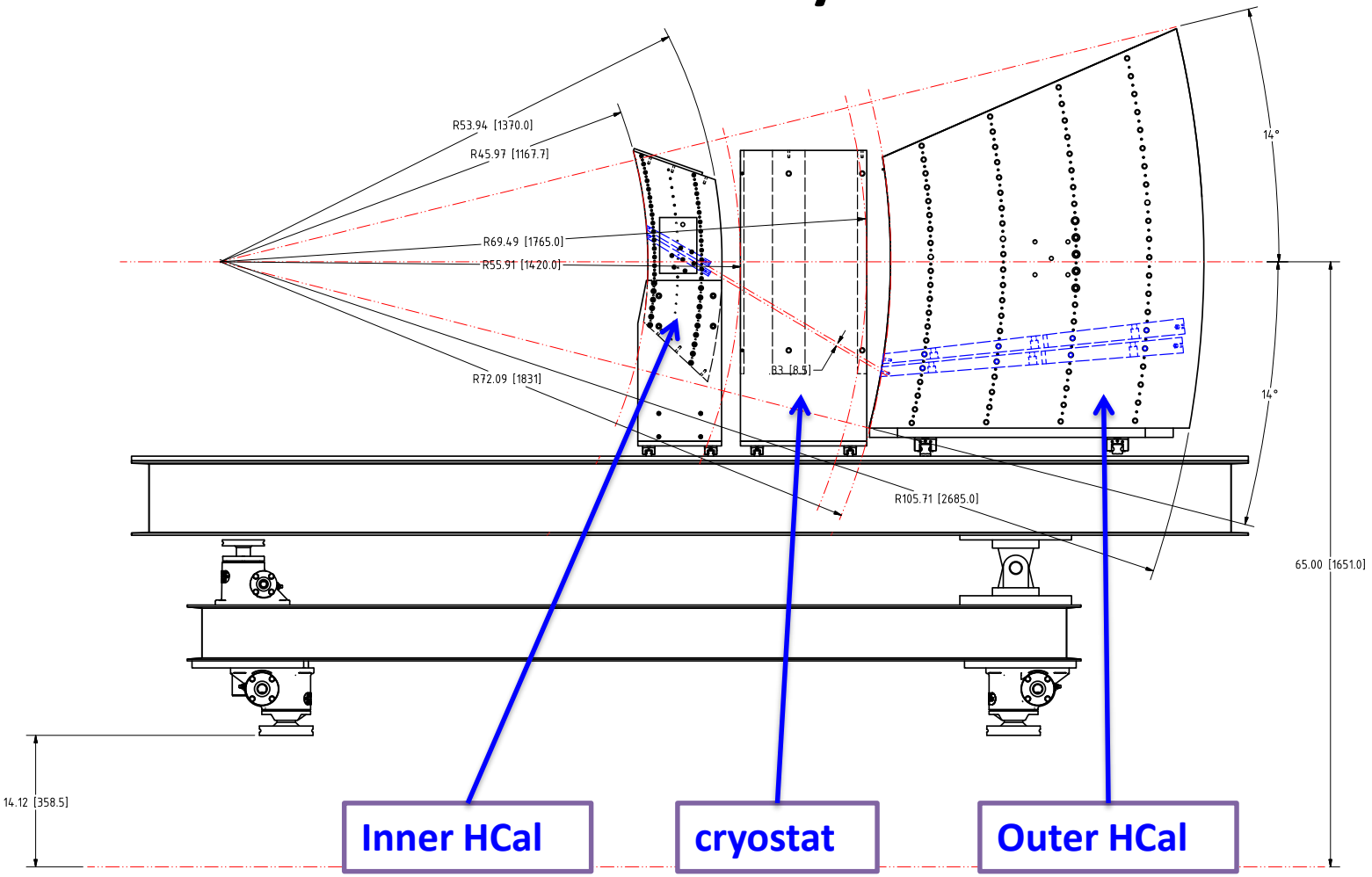
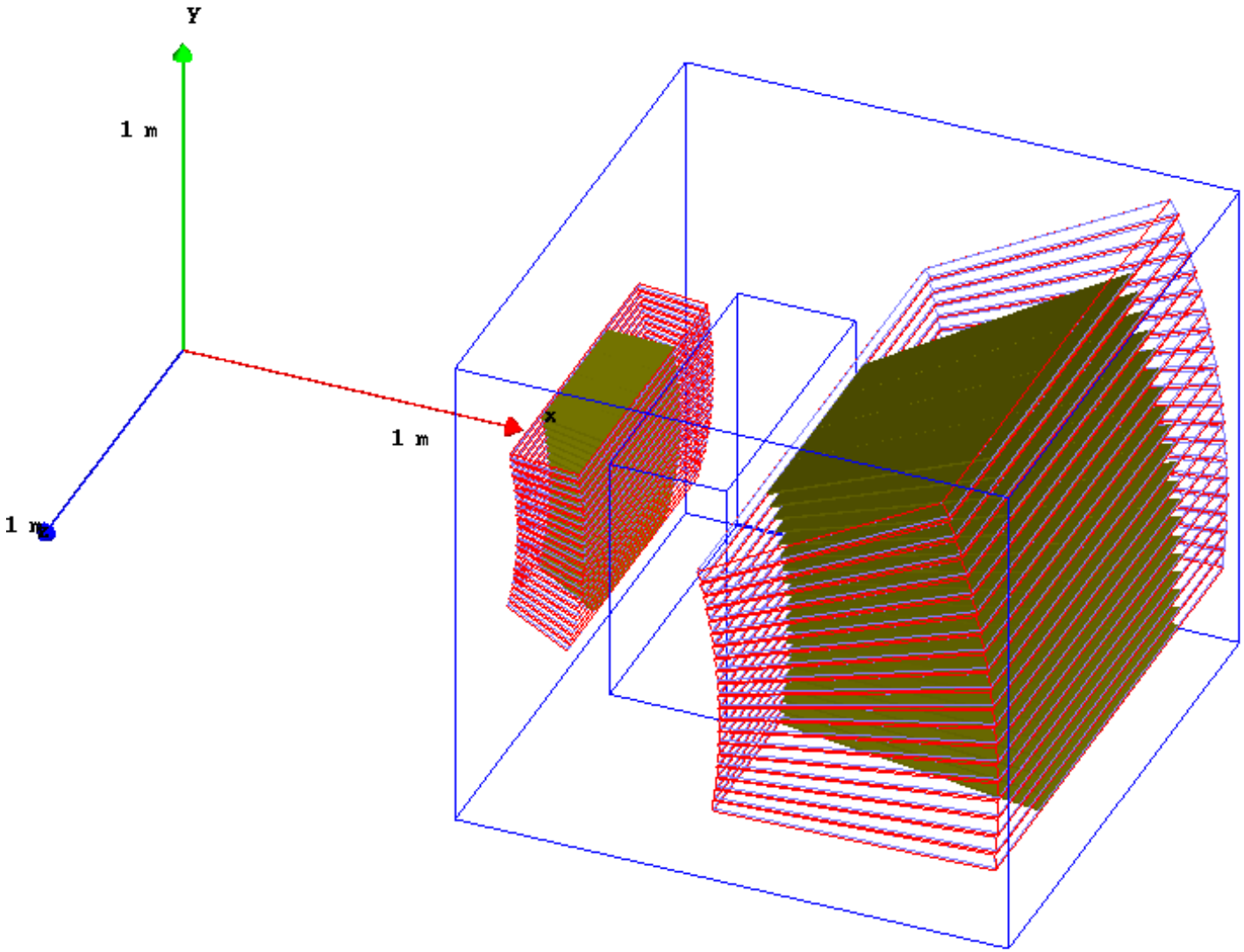
From the last presentation on Nov 24, 2015

GEOMETRY UPDATE

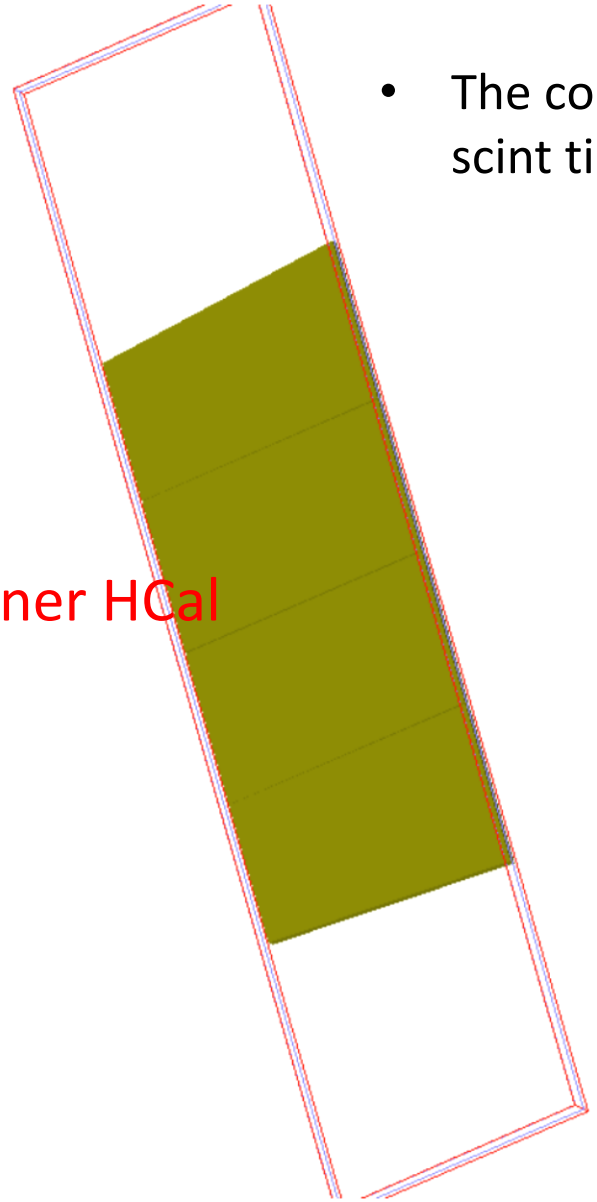
Engineering Design
The whole system

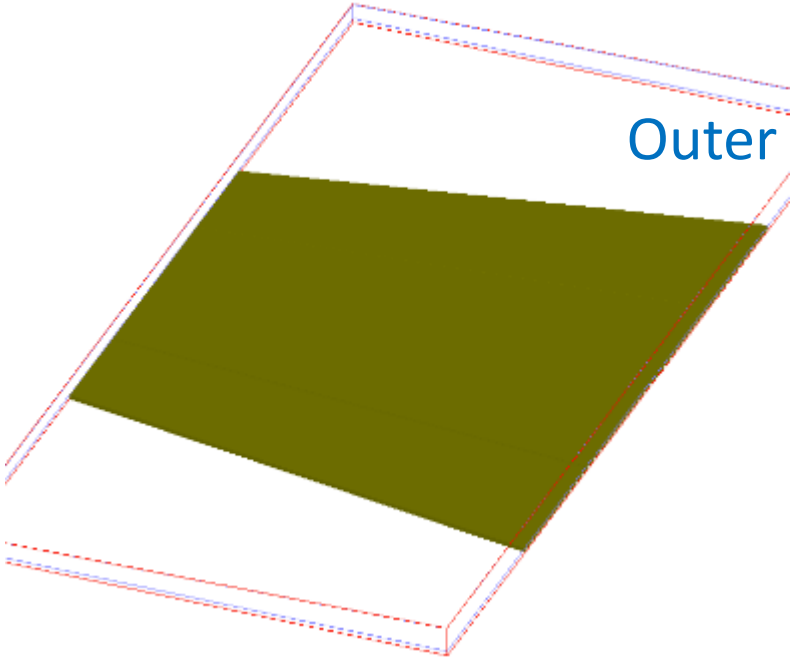


HCal 2nd Prototype Geometry



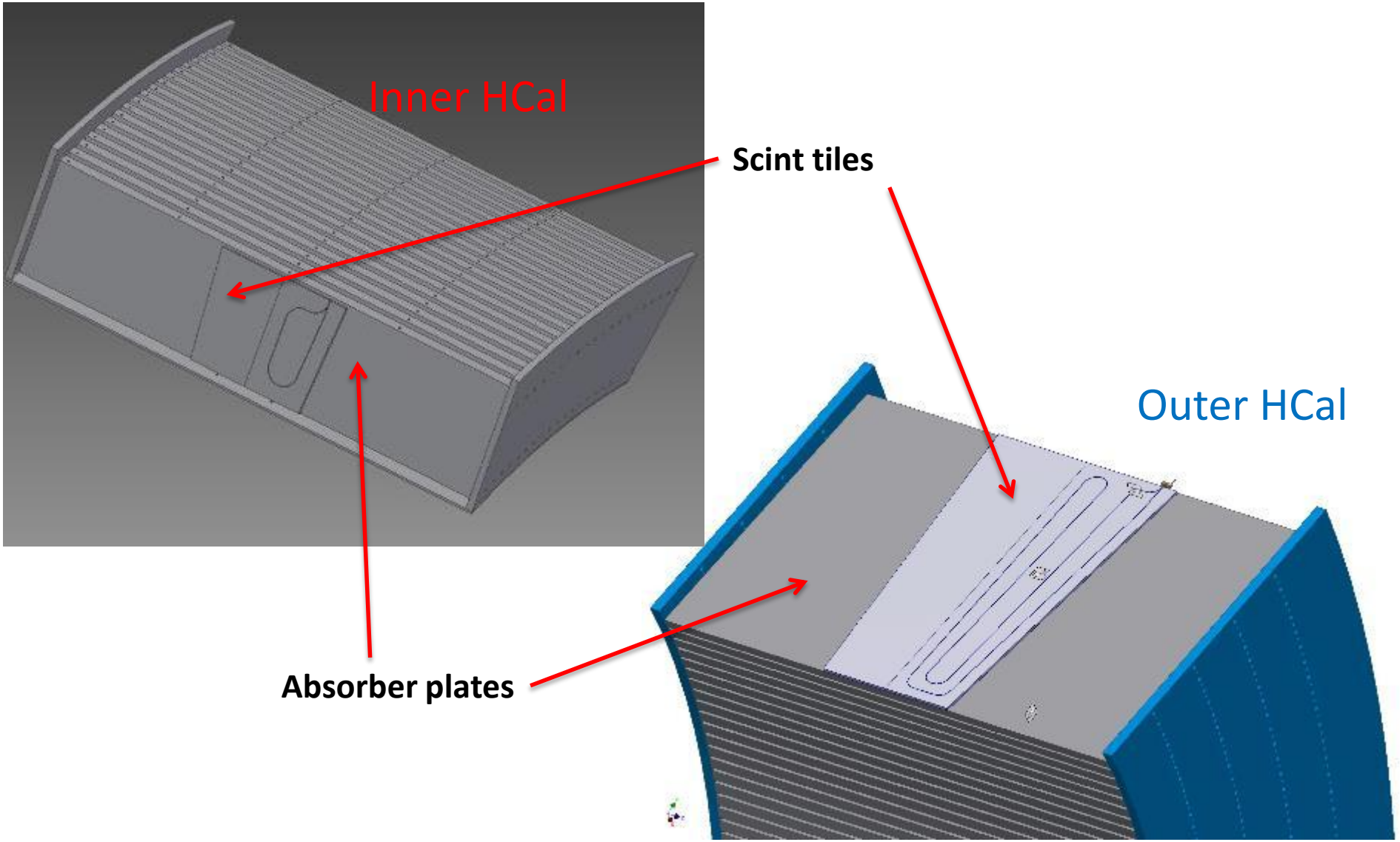
- The container box (in red) holds the absorber plate and four scint tiles.



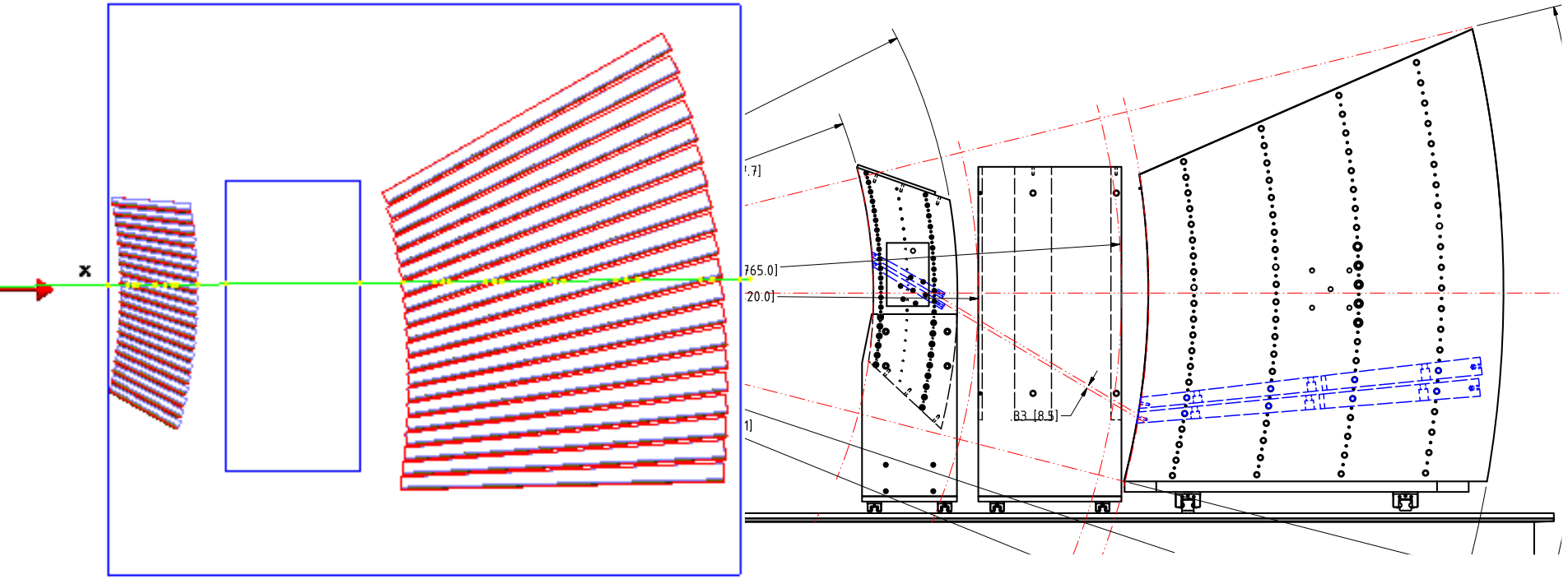


❖ The container box (in red) has the same shape as the absorber. No overlap anymore !!!

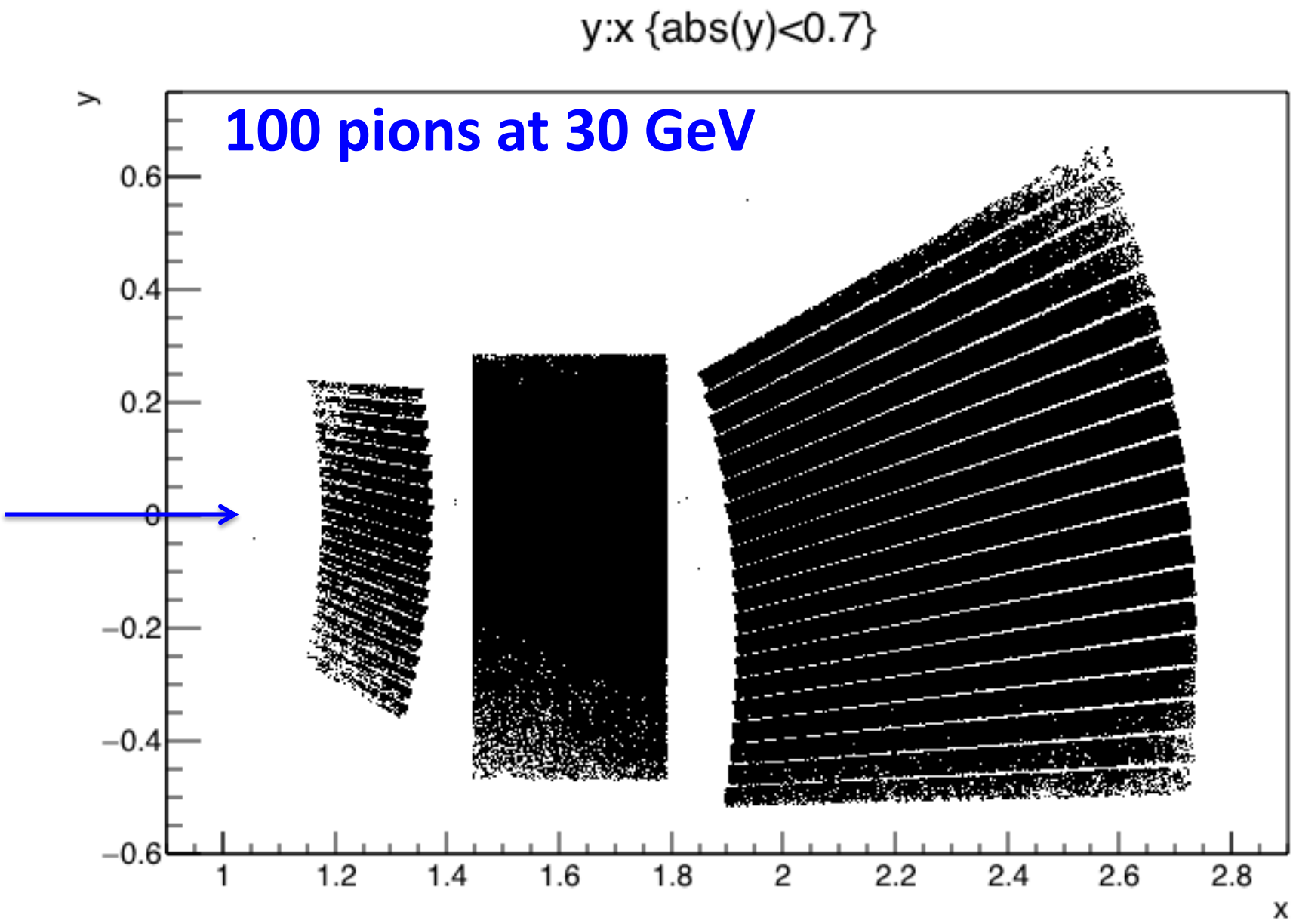
3D Rendering



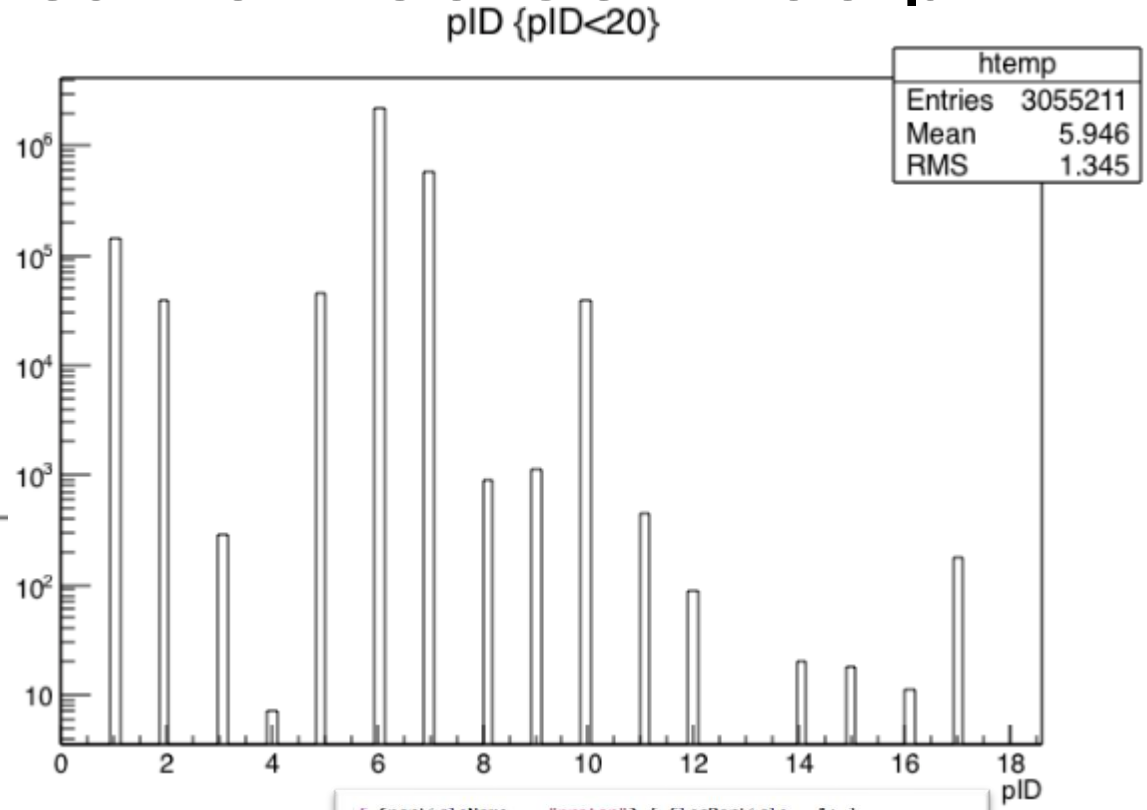
Geantinos?

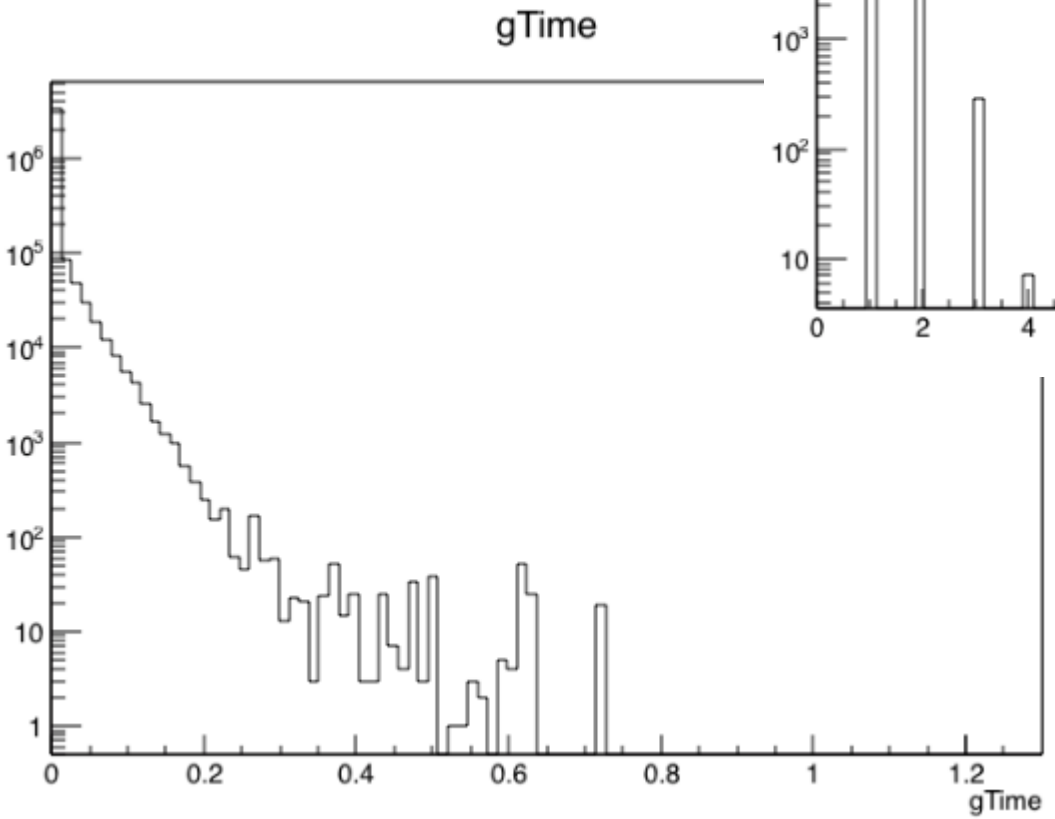


Shower Particle Originating Distribution



Shower Particles from 30 GeV 100 pi






```
if (particleName == "proton") { flagParticle = 1; }
else if (particleName == "neutron")  { flagParticle = 2; }
else if (particleName == "mu+") { flagParticle = 3; }
else if (particleName == "mu-") { flagParticle = 4; }
else if (particleName == "e+") { flagParticle = 5; }
else if (particleName == "e-") { flagParticle = 6; }
else if (particleName == "gamma") {flagParticle = 7; }
else if (particleName == "pi+") { flagParticle = 8; }
else if (particleName == "pi-") { flagParticle = 9; }
else if (particleName == "C12")  { flagParticle = 10; }
else if (particleName == "C13")  { flagParticle = 11; }
else if (particleName == "He3")  { flagParticle = 12; }
else if (particleName == "deutron") { flagParticle = 13; }
else if (particleName == "N14") { flagParticle = 14; }
else if (particleName == "anti_proton") { flagParticle = 15; }
else if (particleName == "anti_neutron") { flagParticle = 16;
else if (particleName == "triton") { flagParticle = 17; }
```

SIMULATION ANALYSIS IN sPHENIX FRAMEWORK

- Working on making similar analysis to that was done for the 1st prototype.

To do list

- Add EMCal prototype
- Repeat Protype-1 studies
- Trigger simulation
- Run plan
  - Orientation selection
  - …